Module 4 Posters and Handouts Guide

Prior to the session . . .

Make the following posters:

- Parking Lot
- Group Norms (see Slide 3)
- Upper Elementary and Upper High School Summary Poster (see Slide 9)

Upper Elementary Summary
Operations with Rational Numbers

Standards:
4.NBT.4-6, 4. NF.B.3-4
5.NBT. B.5-7, 5. NF.A.1-2, 5. NF.B.4, 6, 7

By the end of 5th grade, students can:

- fluently add, subtract, and multiply multi-digit whole numbers,
- divide whole numbers (not to fluency)
- add, subtract, multiply, divide decimals to the hundredths
- add, subtract, multiply fractions and mixed numbers
- divide unit fractions by whole numbers, and vice versa

Upper High School Summary
Operations with Rational Numbers

Standards:
There are no standards related to operations with rational numbers. The work in high school is related to operations with rational expressions.
A2: N-RN.A.1-2, A2: A-SSE.B.3c: These standards deal with rational exponents. When students apply exponent rules to rational exponents, they will be operating with rational numbers.
A2: A-APR.D.6: This standard deals with dividing polynomial expressions. This is analogous to long division with whole numbers.
A2: A-REI.A.2: This standard deals with solving simple rational equations which will require a solid understanding of operations with rational numbers applied to variable expressions.
A2: F-BF.A.2: This standard deals with operations on functions which builds on students understanding of operations with numbers.

Throughout upper high school mathematics, students solve a variety of equations which all require fluency with operations with numbers.

Secure the following materials:

- Table supplies (markers, post-its, and glue sticks or tape)
- Chart paper
- Participant handouts (see next section of this document)
- **M4_CL-03** Sample Questions Card Set (Copied, cut and put in bags. 1 set per every 4 participants)

Verify you have sufficient copies of the following participant handouts:

- **M4_P-00** Module 4 Presentation Slides
- **M4_P-01** Egyptian Fractions II
- **M4_P-02** Operations with Rational Numbers Across the Grade Levels
- **M4_P-03** Posing Purposeful Questions – Question Types
- **M4_P-04** Anticipating and Monitoring Discourse
- **M4_P-05** ENY G6 Module 2 Overview
- **M4_P-06** Looking for Evidence of Student Engagement in the Key Shifts
- **M4_P-07** ENY G6 M2, TA, L4 Student
- **M4_P-08** ENY G6 M2, TA, L4 Teacher
- **M4_P-09** Diamond Reflection: Unpacking the ENY Lesson
- **M4_P-10** Planning Guide

Review the following facilitator handouts:

- **M4_CL-00** Module 4 Overview
- **M4_CL-01** Module 4 Posters and Handouts Guide (this document)
- **M4_CL-02** Egyptian Fractions II Commentary
- **M4_CL-03** Sample Questions Card Set

Review internet access for participants and access to the following websites:

- LDOE K-12 Planning Tools: https://www.louisianabelieves.com/resources/library/k-12-math-year-long-planning
- Achieve the Core Coherence Maps: https://achievethecore.org/coherence-map/